

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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In the Matter of )  
 )  
1998 Biennial Regulatory Review — )  
Spectrum Aggregation Limits for )  
Wireless Telecommunications Carriers )  
\_\_\_\_\_ )

CC Docket No. 98-205

COMMENTS OF SPRINT PCS

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**SPRINT PCS COMMENTS**

Sprint Spectrum, L.P., d/b/a Sprint PCS ("Sprint PCS"), submits these comments in response to the *Notice of Proposed Rulemaking* that the Commission released as part of "a comprehensive review of the 45 MHz Commercial Mobile Radio Services (CMRS) spectrum cap."<sup>1</sup> Sprint PCS demonstrates below that a modification of the 45 MHz cap at the present time is neither warranted nor consistent with the public interest because the cap continues to achieve its stated objective of guaranteeing increased consumer choice and because no CMRS carrier can demonstrate any competitive harm by the cap.

It bears emphasis at the outset that the spectrum cap is unlike all other CMRS regulations. The cap, the Commission has observed, constitutes "a minimally intrusive means of ensuring that the mobile communications marketplace remains competi-

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<sup>1</sup> See *1998 Biennial Regulatory Review — Spectrum Aggregation Limits for Wireless Telecommunications Carriers*, WT Docket No. 98-205, *Notice of Proposed Rulemaking*, FCC 98-308, at ¶ 1 (Dec. 10, 1998), *published*, 63 Fed. Reg. 70727 (Dec. 22, 1998) ("CMRS Cap Reexamination NPRM").

tive and retains incentives for efficiency and innovation.”<sup>2</sup> Because the 45 MHz cap guarantees that no one carrier can possibly dominate the mobile market, the Commission is able to adopt its deregulatory policy for the CMRS market (no service or price regulation) and consumers, in turn, are thereby able to enjoy the full benefits of unfettered competition.

It is also appropriate at the present time to continue use of a “bright line” rule such as the 45 MHz cap rather than rely on a case-by-case, market-by-market analysis approach advocated by some. The CMRS market is changing so rapidly that it is often difficult to obtain reliable data depicting the actual state of competition in a given market.<sup>3</sup> A “bright line” test provides firms requiring additional spectrum the certainty they need to acquire timely additional spectrum without having to face the administrative costs, delays, and uncertainty associated with a case-by-case approach.<sup>4</sup> Besides, as the D.C. Circuit noted earlier this month, “[a] spectrum cap, unlike many other regulations, might actually require a bright-line rule to be effective.”<sup>5</sup>

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<sup>2</sup> *1994 Cap Order*, 9 FCC Rcd 7988, 7999 ¶ 16 (1994).

<sup>3</sup> The most recent public data regarding the CMRS market is the FCC’s *Third Annual CMRS Competition Report to Congress*, FCC 98-91 (June 11, 1998) (“*Third CMRS Competition Report*”). Although the data in this report is only one year old, Sprint PCS believes that there have significant changes in certain markets over the past year.

<sup>4</sup> *See 1994 Cap Order*, 9 FCC Rcd at 8104-05 ¶ 250 (“A cap is a bright line test that provides entities who are making acquisitions with greater assurance than a case-by-case approach that if they fall under the cap, the Commission will approve the acquisition.”); at 8105 ¶ 251 (“[A] cap furthers the public interest by promoting competition in CMRS services, allowing review of CMRS acquisitions in an administratively simple manner, and lending certainty to the marketplace.”).

<sup>5</sup> *BellSouth v. FCC*, No. 97-1630, 1990 U.S. App. LEXIS 205, at 28 (D.C. Cir., Jan. 8, 1999) (court affirms FCC denial of spectrum cap waiver).

## I. Introduction and Summary

It is generally recognized that the CMRS spectrum cap continues to meet its stated objective. As the Commission has correctly observed: “The competitive evolution of [mobile] markets may be traced directly to our decisions to auction additional spectrum . . . and to impose limits on the extent to which firms were permitted to aggregate spectrum in these auctions.”<sup>6</sup> The cap has also been successful “in inhibiting competition-eroding spectrum consolidation”:

[T]he spectrum cap has served the purpose of constraining undesirable erosion of existing competition through mergers or acquisitions in major markets, where competition among multiple carriers is most advanced.<sup>7</sup>

With a 45 MHz cap, the public is guaranteed meaningful competitive choice because no one firm can acquire more than one-fourth of all spectrum allocated to broadband CMRS in any one geographic market.<sup>8</sup>

The spectrum cap has played and continues to play a critical role in the development — and maintenance — of competition in the mobile telephony market. Because the cap guarantees that there will be at least four facilities-based CMRS licensees in every market, the Commission can adopt “hands off,” deregulatory policies towards the CMRS market. This deregulatory policy, in turn, provides the public with the additional benefits of unfettered competition in the CMRS market: lower prices, innovative

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<sup>6</sup> *CMRS Cap Reexamination NPRM* at ¶ 35.

<sup>7</sup> *Id.* at ¶ 37.

<sup>8</sup> The FCC has allocated a total of 180 MHz to broadband CMRS: 50 MHz for cellular service; 120 MHz for broadband PCS, and another 10 MHz for wideband (or enhanced) SMR service. Forty-five MHz represents one-fourth of the 180 MHz allocated to broadband CMRS. The FCC should examine the level of the cap if it allocates additional spectrum to broadband CMRS (e.g., the 2110-2150 band).

services and features, and diverse pricing plans designed to meet the diverse needs of consumers.

Some carriers, largely incumbent cellular interests, contend that the Commission should liberalize the cap, or repeal it altogether, now that CMRS competition is beginning to emerge.<sup>9</sup> According to these proponents, the Commission should permit in the Chicago MTA, for example, a merged Ameritech/SBC to consolidate their respective cellular properties (totaling 50 MHz) and a merged GTE/Bell Atlantic to hold attributable interests in 55 MHz of spectrum.

Sprint PCS does not share this view. Competition within the CMRS market still is not ubiquitous; indeed, the *NPRM* notes that nearly 40% of all BTAs still have no operational PCS system that competes with incumbent cellular operators.<sup>10</sup> And, where competition exists, it remains in its infancy. Even the Commission's own growth projections indicate that over the next four years, cellular carriers will likely maintain a 3-to-1 advantage in customers over new entrant PCS licensees.<sup>11</sup> In this regard, the attached paper by Dr. John Hayes, a former economist with the DoJ Antitrust Division, documents that concentration levels in most of the markets Sprint PCS entered recently remain high — with HHIs often double the 1900 HHI that the Commission has deemed acceptable for the CMRS market.

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<sup>9</sup> Although Sprint PCS is a member of CTIA, it does not share CTIA's new view that the cap is no longer necessary. *Compare PCS Reconsideration Order*, 9 FCC Rcd 4957, 4978 ¶ 50 (1994) ("CTIA . . . oppose[s] Time Warner's proposal for 40 MHz blocks, arguing that such a large amount of spectrum would permit too much concentration of control . . .").

<sup>10</sup> See *CMRS Cap Reexamination NPRM* at ¶ 45.

<sup>11</sup> See *Third CMRS Competition Report*, Table 5A-5E, Mobile Telephone Industry Growth Projections: 1998-2002, pages B-7 and B-8.

Importantly, there is no evidence that any CMRS provider has been unable to serve any customer or introduce any new service as a result of the 45 MHz cap. In fact, few carriers have even accumulated as much as 45 MHz of spectrum in any one market,<sup>12</sup> and to Sprint PCS's knowledge, no carrier with 45 MHz is currently using its entire spectrum allocation. The efficiencies claimed by amassing very large chunks of spectrum, besides being unproven, ignore public benefits by having competitive choices. As the Commission noted less than three years ago:

At some point, however, horizontal concentration starts to work against those goals [of efficiencies and economies] because it results in fewer competitors, less innovation and experimentation, higher prices and lower quality, and these disadvantages outweigh any advantages in terms of economies and efficiency.<sup>13</sup>

What the cap has done is encourage manufacturers to develop and carriers to deploy new technologies that increase the capacity of existing CMRS systems. For example, a carrier deploying second-generation CDMA technologies using sectorized antennas can realize seven times (or more) the capacity compared to a carrier holding the same amount of spectrum and utilizing first-generation analog technology. And, CMRS licensees are now poised to begin deploying third generation and other new technologies that promise even additional increases in capacity.

In the end, the Commission's focus in this proceeding, whether under Section 10 or Section 11 of the Communications Act, is on the public interest. In considering the public interest, Congress has directed that the Commission consider whether

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<sup>12</sup> See *CMRS Cap Reexamination NPRM* at ¶ 38.

<sup>13</sup> *1996 Cap Order*, 11 FCC Rcd 7824, 7869 ¶ 95 (1996).

modification or forbearance of a regulation “will promote competitive market conditions.”<sup>14</sup>

The public interest is served when consumers enjoy more rather than fewer choices in service providers. Because the 45 MHz cap guarantees that no one firm will acquire more than one-fourth of available spectrum, while liberalization or repeal of this cap would almost certainly result in fewer independent competitors, Sprint PCS submits that the Commission has no choice under the statutory standard but to maintain the existing cap at the present time so the competition now emerging can continue to flourish.

## **II. Modification of the CMRS Spectrum Cap at This Time Would Be Contrary to the Public Interest**

Section 11 of the Communications Act requires the Commission to “repeal or modify any regulation it determines to be no longer necessary in the public interest”<sup>15</sup> and the Commission has asked whether it should “repeal, modify, or retain the 45 MHz spectrum cap.”<sup>16</sup> Sprint PCS demonstrates below that the 45 MHz CMRS spectrum cap remains necessary at the present time to ensure that competition in CMRS markets has an opportunity to take hold.<sup>17</sup>

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<sup>14</sup> 47 U.S.C. § 160(b).

<sup>15</sup> 47 U.S.C. § 161(b).

<sup>16</sup> *CMRS Cap Reexamination Notice* at ¶ 1.

<sup>17</sup> For purposes of the spectrum cap, the relevant market is the mobile telephony market, not the local telecommunications market generally. Indeed, the FCC confirmed only last October that broadband PCS does not currently compete with the landline services provided by LECs. See *BellSouth Second Louisiana Section 271 Petition*, CC Docket No. 98-121, FCC 98-271, at ¶¶ 24-43 (Oct. 13, 1998). See also *Third CMRS Competition Report* at 26 (FCC notes that CMRS has the “potential” to compete with landline LECs).



**A. The Reasons the Commission Originally Imposed the 45 MHz CMRS Cap Remain Valid**

The Commission originally adopted the 45 MHz cap in 1994 “to effectuate the broad congressional goal of ensuring that competition shapes the development of the CMRS market”:

We adopt this cap as the minimally intrusive means of ensuring that the mobile communications marketplace remains competitive and retains incentives for efficiency and innovation.<sup>18</sup>

As it later explained in re-affirming the cap in 1996, an “HHI analysis indicates that the 45 MHz CMRS spectrum cap is needed to prevent undue market concentration.”<sup>19</sup> The Commission noted that “an HHI over 1,800 shows a highly concentrated market, in which certain combinations ‘are likely to create or enhance market power or facilitate its exercise,’” and that the 45 MHz cap guarantees that the HHI will never exceed an HHI above 1898:

[W]e believe that concentration levels of 1,900 are acceptable and we conclude that the 45 MHz spectrum cap is necessary to prevent the CMRS market from becoming highly concentrated and to avoid an excessive concentration of licenses.<sup>20</sup>

The concern about market concentration is as valid today as it was in 1994 and 1996. Indeed, recent merger proposals (Ameritech/SBC and Bell Atlantic/GTE) document that the cap is still needed to ensure that competition now developing in the CMRS market is not retarded — or worse, dislodged. Attachments B and C are maps showing the areas of overlap involving the Bell Atlantic/GTE properties and the Ameri-

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<sup>18</sup> *1994 Cap Order*, 9 FCC Rcd at 7995 ¶ 7 and 7999 ¶ 16. *See also id.* at 8104-05 ¶¶ 248-51.

<sup>19</sup> *1996 Cap Order*, 11 FCC Rcd at 7870-71 ¶ 97.

<sup>20</sup> *Id.* at 7870 ¶ 96, 7872 ¶ 100, and 7873 ¶ 101.

tech/SBC properties, respectively. If these mergers were allowed to proceed, without a divestiture of attributable interests, the public would realize a dramatic reduction in competitive choice in these overlap markets:

<u>Market</u>	Current (7/98) <u>HHI</u>	Post-Merger <u>HHI</u>
Chicago	3862	7683
St. Louis	4019	7751
Richmond	3936	4904
Tampa	3207	3881
Houston	3170	3741

Thus, the 45 MHz cap is still needed “to effectuate the broad congressional goal of ensuring that competition shapes the development of the CMRS market.”<sup>21</sup>

**B. Recent Market Changes Have Not Obviated the Need for the Cap**

There have been two major developments in the CMRS market since the Commission adopted the 45 MHz cap nearly five years ago: (1) some of the new PCS licensees have begun to build their systems; and (2) all new entrant PCS licensees and many cellular incumbents have begun deploying second generation digital technologies that provide increased capacity over first-generation analog systems.

1. PCS Deployment. The deployment of new PCS systems has had a major and positive impact on the market. As the Commission advised Congress last June, “substantial progress has been made towards a truly competitive mobile telephone

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<sup>21</sup> 1994 Cap Order, 9 FCC Rcd at 7995 ¶ 7.

marketplace” and “prices have been falling as competition has increased.”<sup>22</sup> A study released by the Yankee Group earlier this month indicates that average prices for mobile telephony services in major markets have fallen by 40% over the last three years alone.<sup>23</sup>

The benefits of this new competition have been uneven, however. The *NPRM* notes that approximately 40% of all BTAs still do not have access to service from either a PCS or digital SMR provider.<sup>24</sup> Indeed, based on the most recent public data, two or more PCS systems are currently operational in only 17% of all BTAs (82 of 493).<sup>25</sup> Thus, the Commission has correctly recognized that “[i]n some areas, consumers’ choices regarding wireless services continue to be limited” and that many Americans still “do not have meaningful competitive alternatives to the incumbent cellular carriers.”<sup>26</sup>

Moreover, competition, where it exists, remains “in its early stages.”<sup>27</sup> As of the end of 1998, the two incumbent cellular carriers still served 87% of all broadband CMRS customers (59.8 million of the total 68.5 million customers).<sup>28</sup> Moreover, even the Commission’s own growth projections indicate that over the near future incumbent cellular carriers will continue to maintain a 3-to-1 advantage in customers over new entrant PCS licensees.<sup>29</sup>

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<sup>22</sup> *Third CMRS Competition Report* at 2 and 3.

<sup>23</sup> See [www.techweb.com/wire/story/TWB19990104S0007](http://www.techweb.com/wire/story/TWB19990104S0007) (Jan. 4, 1999).

<sup>24</sup> See *CMRS Cap Reexamination NPRM* at ¶ 45.

<sup>25</sup> See *Third CMRS Competition Report*, Table 9A, Page B-17.

<sup>26</sup> *CMRS Cap Reexamination NPRM* at ¶¶ 30 and 46.

<sup>27</sup> *Third CMRS Competition Report* at 63.

<sup>28</sup> See *id.*, Table 5D, Total Year-End Subscribership, Page B-8.

<sup>29</sup> See *id.*, Table 5A-5E, Mobile Telephone Industry Growth Projections: 1998-2002, pages B-7 and B-8. Because incumbent cellular carriers continue to dominate the market, Sprint PCS be-

The Commission has recognized that the DoJ/FTC Herfindahl-Hirschman Index (“HHI”) is an useful analytical tool in reviewing the status of competition in a market.<sup>30</sup> The DoJ/FTC have determined that a market with an HHI above 1800 is “highly concentrated,” and that any merger increasing the HHI by “more than 100 points [is] likely to create or enhance market power or facilitate its exercise.”<sup>31</sup> As noted above, the Commission has determined that concentration levels in the CMRS market of up to 1900 “are acceptable.”<sup>32</sup> With the 45 MHz cap, essentially a simplified version of the HHI,<sup>33</sup> the Commission has guaranteed that the HHI of the CMRS market will never exceed 1898.<sup>34</sup>

The Commission’s HHI analysis was based on spectrum allocations and, as such, it represents a “best case” scenario. Among other things, an HHI analysis using assigned spectrum assumes that (1) all broadband CMRS licensees are operational, and (2) each licensee serves a percentage of total customers in a market that reflects its percentage of the total spectrum in the market. Of course, there are few markets where all CMRS systems are operational, and the Commission’s own data confirms that the two incumbent cellular carriers continue to serve a disproportionate number (87%) of CMRS

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lieves it is premature to consider modifying the cellular cross-interest rule. *See* 47 C.F.R. § 22.942.

<sup>30</sup> *See CMRS Cap Reexamination NPRM* at ¶ 33. The HHI has also been used by antitrust courts as a basic tool and has been called “a standard measure of market concentration,” *Western Resources v. Surface Transportation Board*, 109 F.3d 782, 875 (D.C. Cir. 1997), and “[t]he most prominent method of measuring market concentration.” *FTC v. University Health*, 938 F.3d 1206, 1211 n. 12 (11<sup>th</sup> Cir. 1991).

<sup>31</sup> *DoJ/FTC 1992 Horizontal Merger Guidelines*, 57 Fed. Reg. 41552 at §§ 1.5 and 1.51 (Sept. 10, 1992).

<sup>32</sup> *See* note 20 *supra* and accompanying text.

<sup>33</sup> *1996 Cap Order*, 11 FCC Rcd at 7870 ¶ 96.

<sup>34</sup> *See id.* at 7872 ¶ 100.

customers.<sup>35</sup> Thus, it would be reasonable to expect that the actual HHI in individual markets is higher than the Commission approved spectrum proxy HHI of 1900.

The Commission has requested analyses assessing the current level of concentration/competition in mobile telephony market.<sup>36</sup> As the Commission notes, concentration levels can be measured in many ways (assigned spectrum, operational spectrum, subscribers, revenues, traffic/minutes of use).<sup>37</sup> Other than assigned spectrum, the only data available to Sprint PCS from which it can conduct a more current HHI analysis is market share data by customers served. Sprint PCS retained the economist, Dr. John Hayes, to perform an HHI analysis of the 25 most populous metropolitan statistical areas (“MSAs”) based on extensive market data Sprint PCS has acquired as part of a national market research study.<sup>38</sup> The results of Mr. Hayes’ analyses are appended as Attachment A. The data confirms that the actual HHI in major markets are well above the 1900 level that the Commission has deemed acceptable:

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<sup>35</sup> See note 28 *supra* and accompanying text.

<sup>36</sup> See *CMRS Cap Reexamination NPRM* at ¶¶ 4 and 35. See also Separate Statement of Commissioner Powell.

<sup>37</sup> See *id.* at ¶¶ 33 and 36. Given the early stage of competition in the CMRS market, Sprint PCS does not believe it is necessary to determine at this time which factor best measures the state of competition/concentration in the CMRS market. See *id.* at ¶ 35. With competition in its infancy, any HHI analysis will show that current concentration levels today are higher than they eventually will be (so long as the cap is maintained).

<sup>38</sup> Sprint PCS has commissioned the National Families Organization to conduct periodically a national marketing research study of wireless penetration and shares. Other carriers are free purchase the identical data. The study conducted in June/July 1998 included approximately 57,000 participating households. Sprint PCS used these study results in computing the HHI for various markets. Sprint PCS is precluded under its contract with NFO from releasing the market data for public review, although other subscribers to the data can duplicate Sprint PCS’s HHI analysis using the same methodology.

**HHI of Selected CMRS Markets  
(as of July 1998)**

<u>MSA</u>	<u>HHI</u>
Los Angeles	4044
New York	3873
Chicago	3862
Detroit	4209
Pittsburgh	4664
Atlanta	4803
Miami	4534
Newark	4673

Of course, the HHI is much higher in those markets where no PCS system is yet operational.

2. New Capacity-Enhancing Technologies. The second major development since the cap was adopted in 1994 — deployment of second-generation digital technologies — has had the effect of making the cap less intrusive on carriers. Second generation technologies have presented extraordinary increases in capacity over first-generation analog (AMPS) technology. For example, Sprint PCS's state-of-the-art network (CDMA technology, sectored antennas) will eventually provide system capacity that is approximately seven to ten times the capacity when compared to a system having the same amount of spectrum but using first-generation analog technology.<sup>39</sup> Based on

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<sup>39</sup> See Arthur H.M. Ross, *The CDMA Revolution*, [www.cdg.org/a\\_ross/CDMARevolution.html](http://www.cdg.org/a_ross/CDMARevolution.html) (noting that CDMA has the potential to realize 13 times the capacity of a comparable analog system).

currently available data, Sprint PCS also expects that it will soon be able to further increase significantly its existing capacity with the deployment of third-generation cdmaOne and smart antenna technology.<sup>40</sup> Sprint PCS is also testing a new CDMA 8 kbps vocoder that promises to provide the same voice quality as current 13 kbps vocoders, thereby providing yet additional gains in capacity.<sup>41</sup> In response to these new entrant innovations, incumbent cellular carriers are rapidly converting to second-generation digital technologies as well.<sup>42</sup>

It is thus clear that the deployment of new capacity-enhancing technologies is no reason to eliminate the cap. To the contrary, these types of capacity-expanding innovations make the cap far less intrusive.<sup>43</sup> As the Commission has observed:

[I]nnovation that increases spectrum efficiency will allow a firm to raise its share of traffic without having to increase its share of the spectrum utilize to carry traffic.<sup>44</sup>

Indeed, the Commission needs to ask itself whether CMRS licensees would have so readily deployed second-generation technologies or would be so willing to deploy even more efficient third-generation technologies — had the cap not been imposed.

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<sup>40</sup> See Sprint PCS Comments, *Spectrum Issues Related to Third Generation Wireless/IMT-2000* (Sept. 30, 1998).

<sup>41</sup> See *Wireless Week*, "Sprint PCS" Reviving Its National Strategy," 17, 22 (Jan. 4, 1999).

<sup>42</sup> See, e.g., *Third CMRS Competition Report* at 30 ("The most important change in the cellular sector brought about by the rise of competition has been the deployment of digital services . . . . By integrating digital technology into their networks, the cellular operators are able to use compression algorithms to increase the capacity of their networks."); *CMRS Cap Reexamination NPRM* at ¶ 34.

<sup>43</sup> See, e.g., *PCS Reconsideration Order*, 9 FCC Rcd 4957, 4976 ¶ 45 (1994) ("CTIA and Nextel argue that digital technology offers unprecedented customer capacity and that the record does not identify any PCS service requiring as much as a 30 MHz block.").

<sup>44</sup> *1994 Cap Order*, 9 FCC Rcd at 8104 ¶ 249.

In summary, competition in the CMRS market is growing and becoming increasingly intensive. However, “this development is still in its early stages” and there remains “ample room for improvement.”<sup>45</sup> Now is not the time for the Commission to allow the mobile telephony market become more concentrated — and less competitive.

**C. There Is No Evidence That the Cap Is Inhibiting Any Carrier from Serving New Customers or Introducing New Services**

The Commission seeks comment on “whether the spectrum cap serves as a barrier to firms that wish to offer additional services or to adopt advanced network technologies.”<sup>46</sup> Sprint PCS is not aware of any evidence even suggesting that the cap is inhibiting any carrier from serving any customer or providing any service.

The current cap permits any carrier to accumulate up to 45 MHz of CMRS spectrum in any geographic area. As the Commission notes, few carriers have even acquired 45 MHz of spectrum in any market.<sup>47</sup> From what Sprint PCS can ascertain from public records, only one carrier holds 45 MHz of spectrum in only one BTA (AT&T Wireless in Dallas). Thus, in 99.7% of the BTAs, it appears that no carrier has accumulated spectrum up to the 45 MHz authorized limit.<sup>48</sup> In this regard, analysts have further noted that with the deployment of second-generation technologies, some CMRS licensees “have tremendous amounts of excess capacity on their networks.”<sup>49</sup> Consequently, there

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<sup>45</sup> *Third CMRS Competition Report* at 63.

<sup>46</sup> *CMRS Cap Reexamination NPRM* at ¶ 58.

<sup>47</sup> *See id.* at ¶ 38.

<sup>48</sup> It is possible that persons or entities have attributable interests in several licensees that collectively hold 45 MHz in a given market, but this information is difficult to assemble from public records.

<sup>49</sup> *Third CMRS Competition Report* at 24.



appears to be no evidence that the current 45 MHz cap in any way acts as a barrier to firms from providing any desired service.

### **III. The Statutory Forbearance Standard Has Not Been Demonstrated**

As part of this rulemaking, the Commission also seeks comment on a petition filed by CTIA requesting that the Commission forbear from applying the CMRS spectrum cap pursuant to Section 10 of the Communications Act.<sup>50</sup> Section 10 authorizes the Commission to forbear from enforcing its regulations under certain specified circumstances. Among other things, the Commission must determine that forbearance “is consistent with the public interest.”<sup>51</sup> Congress has, moreover, defined how this public interest standard is to be applied:

In making the determination under [this forbearance public interest standard], the Commission shall consider whether forbearance from enforcing the provision or regulation will promote competitive market conditions, including the extent to which such forbearance will enhance competition among providers of telecommunications services.<sup>52</sup>

Under no circumstance can it be said that forbearance from applying the 45 MHz CMRS cap will either “promote competitive market conditions” or “enhance competition among providers of telecommunications services.” With the cap the Commission guarantees there will be at least four CMRS providers in every market. Without enforcement of the cap, it is possible (if not likely) that there will be only three CMRS carriers with a significant presence in each market. Thus, non-enforcement of the cap rule will neither “promote” nor “enhance” competition.

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<sup>50</sup> See *CMRS Cap Reexamination NPRM* at ¶ 68; CTIA Petition for Forbearance (Sept. 30, 1998).

<sup>51</sup> 47 U.S.C. § 160(a)(3).

<sup>52</sup> 47 U.S.C. § 160(b).

#### **IV. The Commission Should Reexamine the 45 MHz Cap in Its Next Biennial Regulatory Review**

Section 11(a) of the Communications Act requires the Commission to “re-view all regulations issued under this Act” in “every even numbered year (beginning with 1998).”<sup>53</sup> Given the rapid changes occurring in the CMRS market, the 45 MHz cap is the very type of regulation that warrants reexamination during each biennial regulatory re-view.<sup>54</sup>

As noted above, at the present time it would be premature for the Commission to modify the cap and permit the mobile market to become more concentrated. While “substantial process [has been made] toward a truly competitive mobile telephone marketplace,” this development “is still in its early stages” and there remains “ample room for improvement.”<sup>55</sup>

Nevertheless, Sprint PCS agrees with the Commission’s assessment that “substantial process has been made towards a truly competitive mobile telephone marketplace” and that “the signs of competition are clear.”<sup>56</sup> Sprint PCS commenced service in several new markets this month alone (*e.g.*, Atlanta, Chicago), and other new entrants are similarly expanding their system buildouts. Thus, it is entirely possible that during

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<sup>53</sup> 47 U.S.C. § 161(a)(1).

<sup>54</sup> The FCC should also reexamine the current level of the cap if it decides to allocate additional spectrum to the CMRS band (*e.g.*, the 2110-2150 band).

<sup>55</sup> *Third CMRS Competition Report* at 63.

<sup>56</sup> *Id.* at 2 and 63. See also *CMRS Cap Reexamination NPRM* at ¶ 34.

the next biennial review that there will have been sufficient market developments to warrant modification of the cap.<sup>57</sup>

## V. Conclusion

The Commission should not misinterpret Sprint PCS's support for the 45 MHz spectrum cap. Like the Commission, Sprint PCS believes that "trusting in the operation of market forces *generally* better serves the public interest than regulation."<sup>58</sup> Sprint PCS's massive capital investment in state-of-the-art PCS networks over the past two years and its introduction of innovative new pricing plans (nationwide calling for as low as ten cents per minute, first incoming minute free) provide ample proof of Sprint PCS's commitment to competition and giving consumers new, increased choices.

However, the spectrum cap is unlike all other CMRS regulations. The 45 MHz cap guarantees that no one entity will acquire more than one-fourth of available CMRS spectrum and thus guarantees that the CMRS market will remain competitive and innovative. Simply stated, it is because of the cap and the resulting guarantee that there will be at least four major CMRS providers in every major market that enables the Commission to adopt its deregulatory policies for the CMRS market, a policy that truly benefits consumers.

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<sup>57</sup> The FCC has requested comment on establishing a "sunset" for the cap. See *CMRS Cap Reexamination NPRM* at ¶¶ 71-72. While this approach has some appeal, market developments in the CMRS market are moving so swiftly that it may be difficult to establish a sunset date at this time. What is important is that, with Section 11, there is a guarantee that the cap will be reexamined in two years.

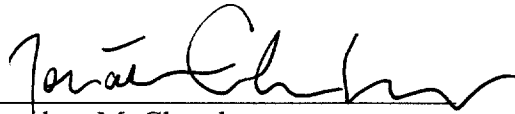
<sup>58</sup> *CMRS Cap Reexamination NPRM* at ¶ 5 (emphasis added).

For all the foregoing reasons, Sprint PCS respectfully requests that the Commission reaffirm the continuing need for the 45 MHz CMRS spectrum cap and that it reexamine the cap during its next biennial regulatory review.

Respectfully submitted

**SPRINT PCS**

By:



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## **Attachment A**

**JOHN B. HAYES**

**CMRS HHIs FROM  
CUSTOMER SHARE DATA**

**WT Docket No. 98-205**

**25 January 1999**

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## **EXECUTIVE SUMMARY**

Herfindahl-Hirshman indices, based on data from mobile wireless telephone customers, range from 3086 to 4803 in the top 25 MSAs and PMSAs. Experience shows that highly concentrated markets generally do not perform as well as less concentrated markets. The high concentration levels in these CMRS markets suggest there is little reason to believe that removal of the spectrum cap would promote competitive market conditions at this time.

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## **I. Introduction and Qualifications**

1. My name is John B. Hayes. I am a Principal employed by Charles River Associates Inc., a consulting firm that applies economic analysis to issues of antitrust and regulatory policy. My work as an economist has been in the area of microeconomics, with a specialization in the study of antitrust and regulatory policies. In the course of my professional career I have had numerous opportunities to consider questions of market concentration in the context of mergers, acquisitions, regulatory proceedings, and other matters.
2. I was previously employed by the U. S. Department of Justice in the Antitrust Division, where my duties included assisting in the Department's evaluations of BOC applications to provide in-region long-distance services. I have also taught courses at Georgetown University and advised government officials in the United States and other countries on antitrust and telecommunications policy.
3. I earned a Ph.D. in Economics from the University of Wisconsin, where my major field of study was Industrial Organization. A copy of my curriculum vitae is attached to this declaration as Appendix A.
4. I have been asked by counsel for Sprint PCS to examine current concentration levels in the mobile telephony market, using wireless telephone customer data collected by the National Families Organization ("NFO"), a nationally recognized market research organization. My analysis is set forth below and shows that, based on the number of customers served, the top 25 CMRS markets are uniformly highly concentrated, with Herfindahl-Hirshman indices ("HHIs") ranging from 3086 to 4803.<sup>1</sup> These results should not be

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<sup>1</sup> The HHI is the sum of the squared market shares of all market participants. The DOJ-FTC Merger Guidelines describe markets with HHIs in excess of 1800 as "highly concentrated." See 1992 Horizontal Merger Guidelines, 57 Fed. Reg. 41552 § 1.5 (Sept. 10, 1992).

surprising given that PCS licensees first began constructing their new networks only two years or so ago.

5. Market concentration is one well-recognized indicator of the ability of firms to exercise market power.<sup>2</sup> The Federal Communications Commission (“the Commission”) acknowledged the significance of market concentration as an indicator of market performance when it reaffirmed the 45 MHz CMRS spectrum cap rule in 1996. As the Commission stated at that time:

The Commission staff’s HHI analysis indicates that the 45 MHz CMRS spectrum cap is needed to prevent undue market concentration and the noncompetitive conditions in local markets that result from such concentration.<sup>3</sup>

Given the highly concentrated nature of these CMRS markets, there is little reason to believe that, absent a showing of substantial efficiency gains, removal of the spectrum cap would promote competitive market conditions at this time.

6. The HHIs reported in this paper were calculated from customer subscription data for CMRS providers. These data do not include customers of paging, dispatch, wireline telephone or other telecommunications services that potentially compete with mobile wireless telephone service. While a complete analysis of the relevant markets for mobile wireless telephone service is beyond the scope of this paper, it is worth noting that the Commission recently held that PCS service is not a substitute for wireline telephone service in Louisiana.<sup>4</sup> The Commission did not address the related question of whether wireline service is a substitute for mobile wireless service. It is clear, however, that for many of the same reasons noted by the Commission in its *Second Louisiana 271 Order*, wireline service is

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<sup>2</sup> Market power is defined as the ability profitability to maintain prices above competitive levels for a significant period of time. Horizontal Merger Guidelines at § 0.1. A complete analysis of the ability of firms to exercise market power would contain an examination of market structure, including barriers to entry, the ability of fringe firms to expand output, and a careful determination of relevant markets. Such an extensive analysis is beyond the scope of this paper.

<sup>3</sup> Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96-59, Report and Order, 11 FCC Rcd 7824, 7870 ¶ 98 (1996).

not a viable substitute for mobile wireless service. Clearly, landline telephone services do not offer the most important attribute of wireless telephone service, mobility.<sup>5</sup> In addition, mobile wireless prices remain well above prices for landline service, and more importantly, the recent declines in mobile prices are being driven by the entry of additional wireless competitors and not by competition from landline carriers. These pricing patterns provide important evidence showing that landline service does not substitute for mobile wireless service.

## **II. Description of the Data**

7. NFO is an independent, nationally recognized market research firm that collects data on mobile wireless telephone markets for sale to commercial and other customers. Sprint purchases the NFO data for market research purposes and relies upon them in the regular course of business.

8. The NFO data are collected from a short questionnaire that is mailed twice yearly to a nationally representative sample of approximately 57,000 persons. The survey has been conducted since January 1998.

9. The survey asks wireless customers to indicate the primary wireless carrier in their household. Due to space limitations, only 15 carriers are listed on the survey instrument. Customers whose primary carrier is not listed are instructed to name their primary carrier in the space provided. Paging and traditional dispatch carriers were not included in the list of named carriers.

10. This form of self-reporting is likely to under count the customers whose carriers are not among the 15 listed carriers. In the data that I examined, the sample number of households that identified a primary carrier often fell short of the sample number of households that reported purchasing mobile wireless

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<sup>4</sup> BellSouth Second Louisiana Section 271 Petition ("Second Louisiana 271 Order"), CC Docket No. 98-121, FCC 98-271 at 8. (October 13, 1998).

telephone service by more than 25 percent. Because these wireless households did not indicate a primary carrier, they could not be included in the market share calculations. It is likely that a substantial number of these excluded wireless households receive service from a carrier that was not listed on the survey instrument. It follows that the shares of carriers not listed on the survey instrument are likely to be under estimated.<sup>6</sup> However, in many markets the excluded carriers have small shares, and this potential source of bias is therefore small.

11. Despite the acknowledged limitations of these data, I believe that they provide reasonably accurate and useful measures of carriers' shares of mobile telephone customers. Sprint has conducted some limited market research on its own that confirms the general accuracy of the NFO data and suggests that the aforementioned biases, if present, are typically small.<sup>7</sup> The Commission can and should rely upon these data to inform its decision in this proceeding.

12. Market shares based on the number of customers served, together with their corresponding HHIs, are an informative complement to the spectrum-based HHIs that the Commission calculated when it reaffirmed the 45 MHz CMRS spectrum cap rule in 1996. As the Commission stated at that time, spectrum is a measure of long-term capacity and is a valid measure of market share.<sup>8</sup> At the same time, the Commission also acknowledged the value of HHIs based on empirical data of customer shares.<sup>9</sup> The deployment of broadband PCS and SMR networks takes time, and the ability of these networks to exert competitive

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<sup>5</sup> Some limited mobility is available through landline telephone services such as calling cards and payphones.

<sup>6</sup> This could occur, for example, in Philadelphia, where one of the cellular incumbents, Comcast, is not listed on the survey instrument.

<sup>7</sup> Sprint's internal market research consists of several telephone surveys conducted in mid 1998. The most noticeable difference between the Sprint data and the NFO data occurred in Philadelphia, where Sprint found a considerably higher share for Comcast than did NFO. Comcast is not contained in the list of carriers included on the survey instrument.

<sup>8</sup> Commercial Mobile Radio Service Spectrum Cap, WT Docket No. 96-59, Report and Order, 11 FCC Rcd 7870 ¶ 96 (1996).

<sup>9</sup> Ibid.

discipline in CMRS markets may be less than is suggested by their long-term capacity until these networks are deployed more fully and provide more extensive coverage.<sup>10</sup>

### **III. Analysis and Results**

13. Sprint provided me with customer share data for the top 25 MSAs and PMSAs for January and July of 1998.<sup>11</sup> Table 1 presents HHIs for these CMRS service regions based upon those data. The table shows that HHIs in these major markets range from 3086 to 4803 in July 1998, in all cases well above the level that the DOJ-FTC Merger Guidelines describe as “highly concentrated.”<sup>12</sup>

14. In general, where competitors have entered markets recently and are expanding their share, such as many wireless telephony markets, market share data will tend to understate the future competitive significance of recent entrants. It is instructive in such markets to examine trends in concentration over an extended period. Table 1 provides two sets of HHI calculations over a relatively short interval. A comparison of the results for January and July shows little evidence that concentration decreased over the six months that elapsed between the two surveys. Concentration decreased in only about one-half of the 25 markets shown in Table 1 between the two surveys, and there were significant increases in concentration in some markets. For example, the HHIs in Atlanta, Miami and Newark each increased more than 450 points. Although this observation period is too short to draw firm conclusions, it does suggest that the entrants’ shares in many markets may not be growing rapidly.

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<sup>10</sup> The Merger Guidelines recommend that market shares be calculated “using the best indicator of firms’ future competitive significance.” Both customer counts and physical capacity are specifically identified as potentially useful measures of market share. Horizontal Merger Guidelines at § 1.41.

<sup>11</sup> Metropolitan statistical areas (“MSAs”) and primary metropolitan statistical areas (“PMSAs”) are geographic areas designated by the U.S. Office of Management and Budget. The general concept of these designations is that of a core area containing a large population center together with those adjacent communities that have a high degree of cohesion with the core area. I ranked the top 25 MSAs and PMSAs by population.

15. My examination of the detailed share data shows that CMRS markets remain concentrated because the cellular incumbents continue to serve the vast majority of customers. Table 2 provides share data for one representative market, the Chicago PMSA. The table shows that the two cellular incumbents are the primary service provider to 87 percent of wireless households in the area. The corresponding HHI for Chicago is 3862.

16. The data provided in Tables 1 and 2 are based on counts of wireless households. Market shares and corresponding HHIs based on CMRS revenues may well exhibit higher concentration levels than those shown in the tables because revenues per customer for cellular carriers typically exceed those of PCS carriers.<sup>13</sup>

17. The high concentration levels reported in Tables 1 and 2 suggest that cellular carriers may be able to exercise market power in many CMRS markets. Although broadband PCS and SMR carriers have made significant inroads in the relatively short period that they have been providing service, the bulk of customers continue to purchase service from the cellular incumbents. There are many potential explanations for this observation. The cellular carriers have broader geographic coverage than PCS and enhanced SMR carriers in most markets, and their more mature networks may have fewer coverage gaps. In addition, some cellular customers may be locked-in to cellular service through service contracts or may be reluctant to purchase a new PCS or digital SMR handset when their current cellular handset meets their needs. All of these reasons point to the fact that while broadband PCS and SMR likely will continue to capture additional CMRS market share, the process of expanding competition in mobile wireless telephone markets will continue to take time.

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<sup>12</sup> The Merger Guidelines describe markets with an HHI above 1800 as “highly concentrated,” markets with an HHI of between 1000 and 1800 as “moderately concentrated,” and markets with an HHI below 1000 as “unconcentrated.” See Guidelines at § 1.5.

#### **IV. Conclusion**

18. Despite the impressive recent gains of broadband PCS and SMR carriers in wireless telephone markets, actual customer data show that CMRS markets remain highly concentrated today. Experience shows that highly concentrated markets generally do not perform as well as less concentrated markets. Absent a convincing demonstration of significant efficiencies available to holders of large blocks of spectrum, there is little reason to believe that the increases in concentration that would follow removal of the spectrum cap would enhance competition in mobile wireless telephone markets.

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<sup>13</sup> I calculated that average revenue per cellular subscriber exceeds average revenue per PCS subscriber by about 15 percent. The calculations were based on data reported in Paul Kagan Associates, Inc., *Wireless Market Stats*, No. 109, Oct. 31, 1998, p. 8.

**Table 1**  
**HHIs in Top 25 MSAs & PMSAs**

MSA or PMSA	January 1998	July 1998
Los Angeles (PMSA)*	3857	4044
New York (PMSA)	4092	3873
Chicago (PMSA)	4119	3862
Philadelphia (PMSA)	3919	3981
Washington DC (PMSA)	3202	3237
Detroit (PMSA)	4194	4209
Houston (PMSA)	2799	3170
Atlanta (MSA)*	4329	4803
Boston (PMSA)	4001	3774
Dallas (PMSA)#	3463	3229
Riverside (PMSA)	3965	4067
Minneapolis (MSA)#	4030	3687
Phoenix (MSA)	3353	3282
Nassau (PMSA)#	4425	4041
San Diego (MSA)	3198	3416
Orange County (PMSA)@	4124	3825
St. Louis (MSA)	4111	4019
Baltimore (PMSA)	3383	3334
Pittsburgh (MSA)#	4487	4664
Seattle (PMSA)#	4113	3699
Cleveland (PMSA)	3269	3086
Oakland (PMSA)	2996	3214
Tampa (MSA)#	3763	3207
Miami (PMSA)#	3998	4534
Newark (PMSA)#	4074	4673

Notes:

\* Airtouch Cellular was formerly marketed under the Cellular One brand name in this service area. Customer counts for Airtouch Cellular and Cellular One were therefore consolidated.

# AT&T Wireless was formerly marketed under the Cellular One brand name in this service area. Customer counts for AT&T Wireless and Cellular One were therefore consolidated.

@ LA Cellular was formerly marketed under the Cellular One brand name in this service area. Customer counts for LA Cellular and Cellular One were therefore consolidated.



**Table 2**  
**Market Shares in the Chicago PMSA**

Carrier	Market Share (%)	
	January 1998	July 1998
Cellular One	45.78	44.58
Ameritech Cellular	44.81	42.86
PrimeCo	2.60	2.41
AT&T Wireless	2.44	4.48
MCI	1.46	3.10
Nextel	0.49	1.38
GTE Wireless (Mobilnet)	0.32	0.17
Motorola	0.32	0.17
Frontier	0.32	0.00
Sprint PCS	0.32	0.00
Airtouch Cellular	0.16	0.34
Omnipoint	0.16	0.00
Alliant Cellular, Alent	0.00	0.17
Bell South Mobility	0.00	0.17
Cellular	0.00	0.17
None/Other	0.81	0.00
Total	100	100

**APPENDIX A**  
**Curriculum Vita for Dr. John B. Hayes**

Charles River Associates Inc.  
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Oakland, CA 94618  
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<b>Education</b>	<b>University of Wisconsin, Madison, WI</b> Doctor of Philosophy in Economics, 1994  <b>University of Denver, Denver, CO</b> Master of Arts in Economics, 1986  <b>Stanford University, Palo Alto, CA</b> Bachelor of Arts in Economics, Stanford University, 1983
<b>Awards</b>	1992 Federal Reserve System Board of Governors Dissertation Fellowship 1986 University of Denver Fellowship
<b>Current Position</b>	Principal, <b>Charles River Associates Inc.</b> , Oakland CA September 1997 - present Economic analysis to support antitrust litigation in high technology and communications industries.
<b>Professional D.C. Experience</b>	Economist, <b>U.S. Department of Justice, Antitrust Division</b> , Washington, D.C.  1993 - 1997 Economic analysis to support antitrust litigation and Federal competition policy. Advised and trained foreign competition agency personnel. Extensive telecommunications experience includes comments filed with the Federal Communications Commission and analysis of the AT&T-McCaw and Bell Atlantic-Nynex cellular mergers.  Adjunct Professor of Economics, <b>Georgetown University</b> , Washington D.C. 1995 - 1996 Taught an undergraduate course in industrial organization.

Research Assistant, **Wisconsin Vocational, Technical and Adult Education System**, Madison, WI  
 1989 - 1991  
 Economic analysis of labor market trends affecting enrollment in the VTAE system.

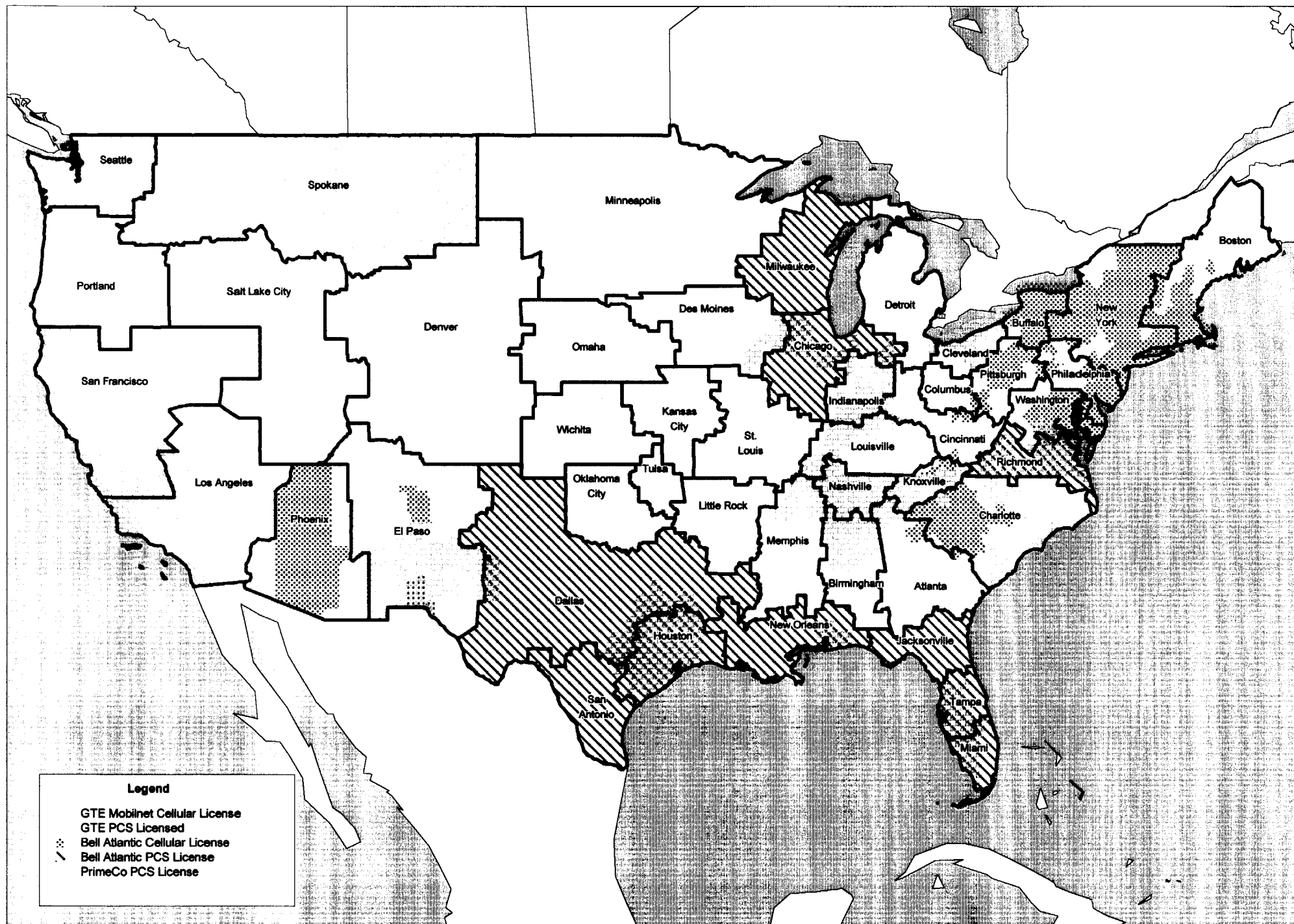
Project Manager, **US WEST, Strategic Marketing Division**, Denver, CO  
 1987 - 1988  
 Identified new business opportunities. Compared the performance of business units to industry benchmarks. Trained staff in the use of data resources for business performance analysis.

Research Assistant, **Medical Group Management Association, Center for Research and Ambulatory Health Care**, Denver, CO  
 1986 - 1987  
 Survey design, implementation, analysis, and presentation of results. Authored articles for the association newsletter and journal. Maintained research databases. Prepared research proposals.

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|------------------------|--|
| <b>Research Papers</b> | <p>1994 Hayes, John B. "Do Firms Play Exit Games? Theory and Evidence on the Strategic Role of Size in an Exit Game." Ph.D. dissertation, Department of Economics, University of Wisconsin-Madison.</p> <p>1994 Hayes, John B. "An Exit Game with Continuously Adjustable Output and Efficiency Differences." Working paper, Department of Economics, University of Wisconsin-Madison.</p> <p>1993 Hayes, John B. "Do Firms Play Exit Games? Some Evidence on the Strategic Liability of Size." Working paper, Department of Economics, University of Wisconsin-Madison.</p> <p>1992 Eisner, James and John B. Hayes. "Labor Market Information for the Trade and Industry Occupations." Wisconsin Board of Vocational, Technical and Adult Education, Madison, WI.</p> <p>1990 Hayes, John B., Catherine M. Cotter, and Ronald J. Hustedde. "Labor Market Information for Business and Marketing Occupations." Wisconsin Board of Vocational, Technical and Adult Education, Madison, WI.</p> |
|------------------------|--|

- 1990 Hayes, John B. "Optimal Exit Strategy in a Stochastically Declining Market." Applied Microeconomics Workshop, Department of Economics, University of Wisconsin-Madison.

## **Attachment B**



## **Attachment C**

